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Variation in activity areas and temporal occupations at the Yaak River Site

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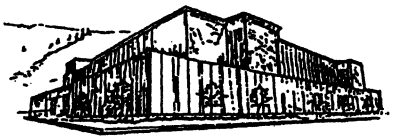

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VARIATION IN ACTIVITY AREAS AND TEMPORAL OCCUPATIONS AT THE YAAK RIVER SITE (24LN1013)

By

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Variations in Activity Areas and Temporal Occupations at the Yaak River Site (24LN1013)

Chair: Thomas A. Foor

The Yaak River Site has been the focus of several past archaeological investigations covering different areas within the site. The data from these investigations have been used to look for areas within the site that reflect single activity or temporal occupations. In addition, the results of the most recent study are documented.

Analysis included the materials recovered from all past studies. While some faunal and floral remains have been recovered, they remain very limited, and few positive species identifications have been possible.

The most plentiful type of artifacts recovered were lithics including tools, debitage, and stones altered during fire and cooking processes. Lithics were classified by material type and function, and where possible temporal affiliation. The results were analyzed by the locations within the site to determine patterns of use within the site.

I would like to thank my chairperson Thomas A. Foor, and Professors William Prentiss and Sarah Halvorson for helping me through this process and asking questions that will guide my work in the future.

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CHAPTER ONE

Introduction

The goal of this thesis is to synthesize information obtained through archaeological excavations of site 24LN1013, the Yaak River site in Montana, with a particular focus on how site formation processes affect our understanding of temporal variation of occupations within the site. I will address this subject using data from a variety of salvage archaeology projects conducted on the site including those by Collins (1985), Brumley (1989), and Calvi (1989), and I will document and analyze the data from 1995 excavations conducted by Zweifel. These excavations were often limited to particular areas within the site, but taken together they can yield information regarding the occupation and use of the site.

Site 24LN1013 is located within the historically known territory of the Kootenai Tribe and more specifically in the Lower Kootenai adaptation area. The division between the Upper and Lower Kootenai areas is located at about the modern community of Libby, Montana (Brunton, 1998), or the southernmost curve of the Kootenai River. While the Upper Kootenai includes the area upriver to the Columbia Lakes area, the Lower Kootenai area takes in the downriver portion to Kootenay Lake. The site is the only ethnographically recorded village site associated with the Kootenai Tribe (Turney-High, 1998 [1941]). Temporally diagnostic artifacts recovered from the site indicate that it was in use as far back as 4,500 years (Brumley, 1989).

The site lies on both sides of the Yaak River just above its confluence with the Kootenai River. Modern day impacts to the site include the construction and maintenance of the Highway 2 corridor, and a developed campground. Archaeological

work in the area has largely been conducted in response to projects involving campground and highway improvements. Collins (1985) excavated the campground using a 200-by-25 meter grid. She excavated 47 one-by-one meter pits on both the up- and down-river (Kootenai River) portions of the site. Nineteen of these yielded cultural material. The artifact collection was dominated by lithic debitage and fire-cracked rock. Temporal definition was provided by diagnostic points all of which are associated with the Late Prehistoric Period.

In 1988, Brumley conducted a more limited excavation in response to a Highway Improvement project. This excavation included two one-by-one meter test pits in addition to 26 "shovel tests" in the area of the site east of the highway on the up-river portion of the site. These test units were 20 cm in diameter and were drilled until they could not penetrate the coarse underlying basal gravels. The cultural materials were similar to those found by Collins in the 1985 excavation, except that diagnostic artifacts suggested an earlier date of occupation dating back to the Late Middle Prehistoric Period.

Calvi (1989) conducted a similar small-scale project in response to proposed campground improvements. He excavated 8 tests units in addition to shovel tests, yielding materials similar to those found by both Collins and Brumley. Diagnostic points from this excavation also indicated a Late Middle Prehistoric Period occupation.

Zweifel's 1995 research included the excavation of 17 one-by-one units in two limited areas in response to an outhouse replacement project. While one of the areas yielded a comparatively rich diversity of lithic debitage along with some tools, the excavations in the second area yielded almost nothing.

Although much archaeological work has been conducted at this site, no formal synthesis of all the projects has been undertaken. My thesis project will analyze the artifacts recovered specifically looking for areas within the site reflecting temporal differences or activity areas The results of the latest excavation will be documented and analyzed along with the earlier work.

CHAPTER TWO

Site Geology and Physiography

The Kootenai River rises just south of the headwaters of the Columbia River. Running south through the Rocky Mountain Trench, it runs through southeastern British Columbia, and northwest Montana for more than seventy miles before turning northwest into Idaho and back north to Kootenay Lake in British Columbia. Coming out of Kootenay Lake, it finally enters the Columbia River that it rises so near, and is its second

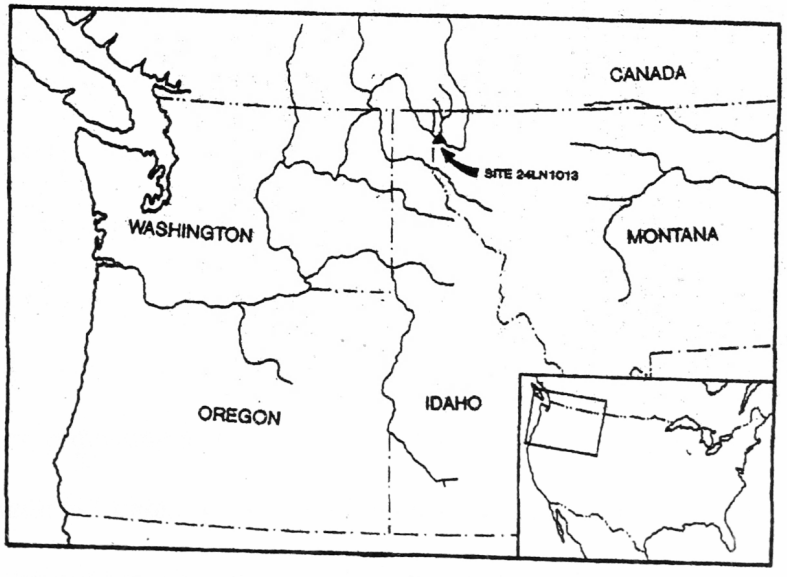

Figure 1: Site Vicinity map for 24LN1013 from Zweifel, 1995

largest tributary. Site 24LN1013 is located within the Kootenai River Valley at the mouth of the Yaak River in an area that was heavily glaciated. The Kootenai River downcut through the glacier deposits starting about 12,000 years ago, and the landform at the mouth of the Yaak River would have been exposed by about 8,200 years ago (Zweifel, 1995)

The Yaak River enters the Kootenai after traveling through a narrow steep-walled canyon of the Wallace Formation of the Precambrium Belt Supergroup (Johns, 1970) that includes gray green argillites, sandstones, shales and some gray and white quartzites (Johns, 1970). This landform forms the northeastern boundary of the site upriver along the Yaak;, and as the Yaak enters the site, the canyon wall prevents the river from cutting downstream to the Kootenai River more sharply than it does. Landforms within the site boundary include Quaternary glacial deposits up against the hill slope, bounded by recent alluvium along the two rivers (Johns, 1970).

Alluvial contexts are formed from river systems that can rework the landscape through time (Waters, 1992). The river erodes only portions of the area, leaving nearby areas intact. This erosion causes gaps in the cultural record which can be misinterpreted as reflecting a lack of cultural use (Waters, 1992) but may also simply reflect the effect of natural forces. Deposition can affect the sites in several ways (Brown, 1997). It can bury and preserve sites, protecting them from subsequent erosional forces, and it can also make them difficult to locate. In an area of low-energy depositional contexts, cultural deposits from different times can be closely overlapping. Higher energy depositional

contexts however, can spread out separate occupations decreasing the likelihood of artifact mixing from different time periods (Brown, 1997).

Rivers transitioning from constricted canyons or mountains into a broader area decrease in velocity and drop sediment load forming alluvial fans (Schiffer, 1987). The portion of the site located northwest of the Yaak River, or downstream on the Kootenai, is the lowest landform within the site. About two meters above the Yaak River, this landform shows two definite old channels which merge at a rocky outcrop rising about three m above the flat in the center of the flat. One channel originates near the Highway 2 bridge and is fairly broad. The second, narrower channel, goes through the site near campsite 43 before crossing under the camp road and merging with the larger channel. This merged channel is visible as a narrow channel on the far side of the campground. This landform slopes gently to the Yaak River with few signs of active erosion. A rocky bar and beach lies between the Kootenai River and the site terrace. Root systems of the vegetation growing on this bar just below the site is helping to stabilize the sediments and protect the Kootenai bank from eroding. Because this landform is newly formed, it is unlikely that it was present during prehistoric occupations and so it is unlikely to contain cultural materials. This may also indicate that the adjacent down Kootenai River side of the Yaak River, is a more recent landform.

The next terrace on the southeast side of the Yaak, or upriver on the Kootenai is about 3 meters above the Yaak River. This bank is relatively steep, with some active erosion at its base. A narrow rocky beach bounds the site towards the Kootenai River, although some signs of erosion along that bank are also present.

The third and final terrace in the site lies on the upriver side of the site up against the hill-slope. This terrace starts where the Yaak River exits the canyon and crosses the highway veering away from the Yaak River. The face of this terrace towards the Yaak River rises about two meters above the lower terrace. There is no terrace face towards the Kootenai River as the landform gently slopes down to merge with the lower terrace.

The uphill portion of the site, upstream on the Yaak River, is up against the steep hill-slopes slopes are a part of the landform which creates the narrow river canyon along the Yaak. Colluvial deposits can deeply bury cultural deposits (Schiffer, 1996), which may have affected cultural deposits in this area.

The Environment and Human Occupation

Northwest Montana bears evidence of the heavy glaciation that was on-going through the Pleistocene and into the Holocene (Schalk and Mierendorf, 1984; Choquette, 1984). Kettle lakes and kames dot the landscape in some area as warming temperatures and glacial melt left marks on the landscape. Schalk and Mierendorf (1984) describe the paleoenvironmental conditions in northwestern Montana from about 23,000 years ago to present in four major periods: 1) the Full Glacial (23,000 to 14,000 BP), 2) Late Glacial (14,000-11,500 BP), 3) the Periglacial (11,500 to 8,500 BP) and 4) the Interglacial (8,500 BP to present). Choquette (1984) provides a more detailed interpretation of the Altithermal period from about 8,500 to 5,000 BP.

During the Full Glacial (Schalk and Mierendorf, 1984) from 22,000 to 18,000 years ago, the East Kootenai lobe of the Cordilleran ice sheet formed from numerous

small mountain glaciers covering portions of northwest Montana near Libby and Eureka with ice up to 4,000 feet in thickness. While many of the mountains in the northern portion of this area were overrun by ice giving them a rounded appearance, the more rugged Cabinet Mountains south of Libby and Troy were not covered. Schalk and Mierendorf indicate no evidence for human occupation in the project area during this period.

Name	Period	Comments
Full Glacial	23,000-14,000 BP	East Kootenai Lobe of the Cordilleran ice sheet covers much of northwestern Montana. No evidence of human occupation.
Late Glacial	14,000-11,500 BP	Period of warming and deglaciation leaving portions of the Kootenai River valley ice-free. Evidence for human occupation nearby but not within the Kootenai River area.
Periglacial	11,500-8,500 BP	Active stream beds and Kootenai River begins downcutting. Earliest sparse evidence for human occupation at the end of this period.
Interglacial	8,500 BP to present	Begins as a warmer, drier period followed by a brief glacial resurgence at 4,000 BP. A climate similar to the present climate was established by about 2,000 to 3,000 BP Evidence of human occupation common by 5,000 BP.

Figure 2: Schalk and Mierendorf's Periods (1984)

During the Late Glacial from 14,000 to 11,500 BP, Schalk and Mierendorf propose a dynamic period of warming and deglaciation synchronous with regional trends (1984). During this time melting ice chunks created small depressions and lakes, while run-off created at least two glacial lakes. By 12,200 years ago, the earliest lake was present, and the glaciers had retreated "leaving portions of the Kootenai River valley ice-free and available for establishment of pioneer vegetation" (Schalk and Mierendorf, 1984). The severe climatic conditions and dynamic landscape of this period would have hindered the establishment of stable plant and animal populations making human

occupation difficult, although they note there is early evidence for human occupation in the adjacent central and southern Idaho areas from 15,000 to 11,000 years ago.

Schalk and Mierendorf indicate the earliest, sparse, evidence for human occupation of the area occurs towards the end of the Periglacial (11,500 to 8,500 BP) in Aeolian sand deposits capping early river terraces. This was a time of active streambeds and during this period from 11,500 to about 8,200 years ago, the Kootenai River downcut through the glacial deposits to its present elevation of 2,500 feet. Vegetation in the area became more mesic, adapted to the moister environment, towards the end of the period in the continuing warming trend.

Schalk and Mierendorf's Interglacial Period of the last 8,500 years starts as a warmer and drier time period, followed by a readvance of the glaciers after about 4,000 years ago. By 2,000 to 3,000 years ago, the climate and vegetation was similar to today's environment. They indicate that evidence of human occupation is common for the last 5,000 years (1984).

Choquette (1987) provides more detailed analysis of the drier period (8,500 to 5,000 years ago), which he describes as a time more prone to wildfires and resulting vegetation changes. He indicates the hottest and driest conditions in this region occur just before the height of temperature and aridity that peaked about 7500 to 5500 years ago on the eastern Plains (1987). He describes the climate between about 8500 – 7000 years ago as Continental, with very cold and dry winters and more frequent intrusions of arctic air. Summers, he describes, as long, hot and dry often persisting from as early as March or April through October. The resulting drought conditions likely produced

severe fire seasons as early as May or April. The effect of these wildfires would have been to keep grazing open along the now stabilized floodplains that would have been conducive for ungulates such as mountain sheep and bison. The reduced number of shrub plants however, might have impacted the winter range for deer, although generally winter range would have been more extensive.

For the period from 6,700 to 5,200 years ago, Choquette (1987) describes a slightly milder climate with oceanic influences, or Maritime climate. Winters were slightly milder and increased precipitation would have decreased the likelihood and severity of wildfires. The decline in wildfires would change the vegetation from fire climax species, and would have reduced winter range at higher elevations causing a shift in ungulates to lower elevations. The maritime influence first affects the area, with mesophytic species becoming dominant west of the divide, and the rain shadow affecting the eastern slopes of the Rocky Mountains.

After 5,200 years ago, Choquette (1987) infers a Neoglacial advance during a brief climatic fluctuation. This made the last 5000 years generally cooler and moister than the 3500 years before.

Kutenai Ethnography

The Kutenai Indians occupied this area of northwest Montana, northern Idaho and southeastern British Columbia along the Kootenai River between the Rocky Mountains and the Selkirks at the time of Euro American contact. Their first contacts with Euro Americans occurred in the early 1800s (Turney-High, 1998 [1941]) and were through the

fur trade. Ethnographic work was mostly conducted in the first half of the 20th century (Smith, 1984; Turney-High 1998 [1941]).

The traditional Kutenai territory included the Kootenai and Columbia Rivers in the Rocky and Selkirk mountain ranges, with "a distinct recollection of having formerly lived east of the Rocky Mountains" (Chamberlain, 1892). Turney-High notes that although they would encounter hostile Blackfeet east of the Rocky divide, the Kutenai considered the eastern face theirs and maintained their hunting rights there (1998 [1941]).

The reports of early ethnographers of the Kutenai indicated that they were subdivided into two major groups, the Upper and Lower Kutenai, a division that was geographical as well as cultural as reflected in two dialects of the Kutenai language (Chamberlain 1892; Turney-High 1998 [1941]). Smith (1984) notes that although early ethnographers generally recognized the two groups, they often failed to distinguish between these groups in their work, leading to difficulty in determining how different these two groups were.

The geographical division between the Upper and Lower Kutenai was generally considered to be around the Libby area, and in addition to the Upper and Lower Kutenai organizations, they were divided into numerous, politically independent bands (Smith, 1984; Turney-High 1998 [1941]; Chamberlain 1892). Although the total number of bands and the area each occupied is unclear, the bands noted by ethnographers along the Kootenai River include Windermere, Fort Steele, Fernie, Tobacco Plains, Jennings, Libby, Flathead Lake, Bonners Ferry and Creston (Smith, 1984; Turney-High 1998 [1941]).

While the Kutenai are recognized as perceiving themselves as culturally different from their neighboring tribes, the Upper and Lower groups had different life ways that to some degree reflected the different environments they inhabited along the Kootenai River (Smith, 1984; Turney-High 1998 [1941]). The Upper Kutenai focused more on hunting, including trips east of the Rockies to hunt bison. They would engage in communal bison and deer hunts. Although Thoms (1984) notes no archaeological evidence that reflects the importance of bison, ethnographic accounts indicate at least one annual hunt prior to acquisition of the horse, and perhaps three once horses were available occurring in the spring, summer and winter (Smith, 1984). Fishing and plant gathering were generally considered to be of greater importance to the Lower Kutenai than the Upper due to the narrower river valley environment along the Kootenai River below Libby. Their canoe was of a distinctive design that has been compared to canoes of Siberia (Turney-High, 1998 [1941]; Chamberlain, 1892).

Turney-High (1998 [1941]) believed the Lower Kutenai had a late lithic projectile point technology due to the lack of good lithic sources. He noted that because of this lack they used wooden points in the early period, which persisted even when lithic resources were acquired.

Cultural Chronologies: Early pre-8000 BP

The Goatfell (Choquette, 1984, 1987) and Early Prehistoric (Thoms, 1984) complexes represented the earliest occupations in the two chronologies proposed for the Kootenai area. Both early complexes show human occupation prior to 8,000 BP, and are

characterized by large lanceolate points. Thoms (1984c) characterizes the Early and Early Middle Periods by increasing use of the area based on numbers of sites with Early and Early Middle components, with a mobile foraging focus that used resources from the valley walls rather than bottoms. Projectile points associated with these components are large, lanceolate-shaped and stemmed, concave base points, and large side-notched and eared points (Thoms and Schalk, 1984). Choquette's (1984) Goatfell complex is further characterized by lithic artifacts dominated by black metamorphosed siltstone debitage, with sites found in buried contexts on dunes and beaches higher than present levels. Choquette associates the Goatfell complex lanceolate points with Glacial Lake Kootenai that predates 10,000 BP, along with hunting camps in the southwestern Purcell Mountains and other sites.

Choquette (1987) believes that the climate changes around 6700-7000 years ago, would have resulted in increased forest vegetation on the west side of the mountain slopes which would have decreased game carrying capacity. He suspects that a hunting-oriented people would have shifted easterly to the rain shadow grasslands (where game-carrying capacity would have remained higher) to cope with the decrease in resources.

Evidence for Choquette's population shift may be inferred from the artifact densities, which are higher in the Goatfell complex than the post-Mazama Bristow Complex (Choquette, 1984), which includes large side and side/corner-notched points as well as stemmed points. The Bristow Complex shares technology with the earlier Goatfell complex and also shares a hunting-related focus. However, the density of occupation as indicated by known sites on the east side of the Purcell Mountains seems to

increase during the Bristow, which Choquette feels possibly indicates the relocation of people following higher densities of game.

Cultural Chronologies: Middle ca.8000-200 BP

By the late Middle Prehistoric period (4500 to 1500/1000 BP), Thoms (1984c, 1987) sees a shift toward a collector system with sites reflecting decreased mobility as major, seasonally abundant food resources are collected and stored. Resource use was more evenly spread between valley walls and bottoms and the relative frequency of projectile points from this period indicates increasingly intensive occupation of the area by this time (Thoms and Schalk, 1984). Choquette's Inissimi Complex overlaps this Thoms and Schalk's Middle Prehistoric Period from 3,500 to about 2,000 BP. The Inissimi Complex is defined by a high frequency of Kootenai Argillite from a source on the north arm of Kootenay Lake in British Columbia. He infers an increase in trade and travel because the source is located at such distance from the lower Kootenai River area. The sites at which Kootenai argillite is found are associated with the earliest intensive use of the floodplain terraces indicating a riverine resource base. Towards the end of the complex after 2000 BP, the incidence of Kootenai Argillite declines with a growing preference for local micro- and cryptocrystallines (1984).

In the Late Prehistoric (1500/1000-200 BP) and Historic (200 BP – present) components, Thoms (1984c) sees increasing specialization of activities indicating a continuing trend towards a collector system. Thoms (1984c, pg 421) indicates that

Thoms	Choquette
EARLY PERIOD	GOATFELL PRE-8,000 BP
Large lanceolate-shaped (Plainview, Agate Basin, Lusk) Large, stemmed, concave based (Windust, Pryor) Occupation predominantly on higher terraces	Lanceolate points Occupation predominantly on higher terraces
EARLY MIDDLE 8,000-4,500BP	BRISTOW (POST-MAZAMA)
Large side-notched (bitterroot), Large, eared, wtith indented base (Oxbow) Occupation predominantly on all terraces	Large side and side / corner notched points Stemmed points Decrease in population due to denser forests/reduced game on west, so population shifts east following game
LATE MIDDLE 4,500-1,250 BP	INISSIMI 3,500-2,000BP
Large, indented base (McKean), Large short-stemmed (Besant), Medium corner- to side-notched (Pelican Lake stemmed), Large, stemmed straight base (Hanna corner-notched) Large wide-notched (Kutenai Plains side-notched), Medium stemmed concave base (Duncan/Hanna Stemmed), Large corner-notched and barbed (Pelican Lake) Occupation predominantly on all terraces	Kootenai ArgIllite (trade) Use of floodplain terraces indicating a riverine resource base At end, decline in the use of K-arg, with growing preference for local materials
LATE PERIOD 1,500-200 BP	AKAHONEK (TOBACCO PLAINS) / AKIYINEK (LIBBY-JENNINGS) 1,000-550 BP
Arrow-sized points: Small, corner-notched and barbed (Blue Dome/Mummy Cave Corner notched) Small corner- to side-notched (Samantha side-notched or Columbia Valley co-no) Small corner-notched, concave base (Shaunavon truncated-base) Small side-notched (Plains side-notched, Avonlea)	Contemporaneous complexes reflecting ethnographic groups: Akahonek: Top of the world cherts and heat treated rocks, persists after Akiyinek Akiyinek . gold and red cherts

Table 1

Figure 3: Summaries of land use models proposed by Thoms (1984) and Choquette (1984)

evidence for large villages, with long-term occupation and food storage reported ethnographically is lacking from the archaeological record.

On the other hand, Choquette identifies two land use patterns in the Libby area during the last 1500 years (1984) that he correlates to ethnographic groups. These patterns overlap in time, and he notes an association of material type to Turney-High's ethnographic work distinguishing the Tobacco Plains (Akahonek) from the Libby-Jennings (Akiyinek) Bands. The Akiyinek Complex (1000-550 BP), he identified from only a few sites on alluvial terraces in the Libby area. Lithics are dominated by gold and red cherts, which was associated with the Libby-Jennings Kutenai band by Turney-High. The Akahonek Complex (550 BP to contact) is characterized by Top of the World Chert, and thermally altered rock, bone and small, side-notched arrow points. He notes the Akahonek persists after the Akiyinek.

Sites and Artifacts

The majority of archaeology research conducted in northwest Montana has been conducted within the drawdown zone of Koocanusa Reservoir (Thoms editor, 1984). In this area sites are characterized by shallow vertical stratigraphy due to the slow deposition rate in the drawdown area. While most sites are characterized by disturbance due to bioturbation or cryoturbation, a few sites were considered to still have some measure of intact deposits, and most intact buried cultural materials were retrieved from less than 30 cm in depth (Thoms, 1984a).

Thoms (1984) notes five categories from the sites recorded in Koocanusa Reservoir. These include lithic tools and debitage, fire-cracked rock, bone and faunal remains, rare/exotic aboriginal remains and historic or non-aboriginal remains. Most bone was burned and recognizable elements came from deer, mountain sheep and elk. Ten sites yielded what were considered rare artifacts, which included deer antler tines, a shell bead and shell fragments, trade beads and fragments of sheet copper ornaments and pipestone.

Lithics form the dominant artifact type in the study area (Thoms editor, 1984; Brumley, 1994; Choquette, 1984). The analysis of the lithic artifacts from 249 sites located around Koocanusa Reservoir indicates a predominance of flaked debitage and tools, with ground and pecked stone artifacts relatively rare. Of the over 32,000 artifacts, 161 projectile points were considered diagnostic allowing dating of components in 58 sites (Thoms, 1984b; Thoms and Schalk, 1984), and span the full range of time for which there is evidence of human occupation in the area back to before 8,000 years ago. Site chronologies are based on inference from artifact presence and regional point typologies (Choquette, 1984; Brumley, 1994).

The presence of fire-cracked rock that has fractured in such a way to indicate stones used to boil water has been used as a marker of more recent, post-6000 BP occupation (Brumley, 1994). Two kinds of fire-cracked rock, hearthstones and boiling stones, are generally recognized based on fracture patterns based on experimentation and observation (Thoms, 1984b; Brumley 1994). Hearthstones fracture during the heating process resulting in a curvilinear break or spall. Boiling stones, used to heat water break

upon cooling, and tend to fracture in an angular pattern. Brumley uses the lack of stones characteristic of stone boiling to confirm an early diagnostic projectile point date at the MacGregor Lake site.

The archaeology of the Kootenai River region of the Rocky and Purcell mountains is hindered by conditions that decrease the ability to determine stratigraphic sequence or chronometric dating (Thoms editor, 1984; Brumley, 1994; Choquette, 1984). Common problems include the lack of faunal or floral preservation that leaves the artifact collections dominated by lithics. Dating is difficult due to poorly defined stratigraphy that is often shallow because of slow deposition, and heavily disturbed by root growth and animal activity. Because of this lack of good stratigraphic control, diagnostic artifacts rely on broad-scale chronologies rather than direct dating within the study area.

The affects of pedoturbation on sites can mix sediments and cultural depostits (Waters, 1989; Brown, 1997). Within the sites studied, researchers noted considerable ground disturbance caused by:

> "a number of postdepositional processes contributed to vertical homogenization of these upper deposits and possibly the associated artifacts. The most important of these mixing processes are mass sediment displacements through tree throw and vertical displacement of particles through normal tree root growth and from freeze-thaw cycles. The cumulative effect of such processes operating over nearly 10,000 years of continuous forest growth must be emphasized" (Mierendorf, 1984, pg 126).

CHAPTER THREE

History of Investigations

This project uses data collected from several projects including four major excavations designed to analyze deposits at site 24LN1013. In addition to documenting the 1995 excavations, the project looks at land use within this site, trying to tie artifact types and artifact material types to specific areas within the site to attempt to find activity areas. Because of a lack of any diagnostic indicators besides lithic projectile point types, an attempt is also made to link certain areas or landforms within the site to more limited time periods to help show changing use of the area through time. While one goal of the 1995 excavations was to determine if the information in this site resembles one of the land use models proposed by Thoms (1984) or Choquette (1984), unfortunately the lack of independent temporal diagnostic evidence limits much of the interpretation of this. I used Thoms' (1984) terms to describe materials projectile points, and materials types are interpreted based on the work of both Thoms and Choquettes.

Project #	Positive Units	Negative Units	Total Units	Positive shovel tests	Total shovel tests	Comments
Collins, 1985	19	28	47	0	0	Late Prehistoric artifacts
Brumley, 1988	2	0	2	26	26	Late Middle Prehistoric artifacts
Calvi, 1989	6	1	7	8	9	Late Middle diagnostic artifacts
Zweifel, 1995	14	3	17	0	0	Late Middle and Late diagnostic artifacts

Figure 4: Summary of the four projects at site 24LN1013, showing comparisons of extent and results

Lithic artifacts were counted by excavation unit. Surface artifacts were not well-provenienced and so these were not used except more generally in describing the site. Many of the local material types are difficult to distinguish accurately as they grade from mudstones to quartzites. Therefore, material types were classified as either local or non-local. Non-local material types include Kootenay Argillite as described by Choquette, cherts and chert-like materials, and obsidian. Obsidian occurs so rarely in this site that it was not defined on its own. Local material types include quartzites and mudstones which are commonly found in the river cobbles and bedrock along the Kootenai and Yaak Rivers. Lithic debitage was dominated by flake fragments. Tools were relatively rare and were also described by local and non-local sources.

I classified materials by where they were found and made three comparisons. The first contrasted the materials found in the down-river (along the Kootenai) portion of the site versus those upriver. Because the down-river portion of the site is down-river of both the Kootenai and Yaak Rivers and so more susceptible to river flooding and erosion, lower in elevation, and shows greater impact from past channeling, it is considered a higher energy and more active erosional and depositional surface. This contrast used only those units along the Yaak River to try to control for the discrepancy in numbers of units in the down-river and upriver portions of the site, as well as their locations on the landforms.

The second analysis contrasted those materials found on the lower upriver terrace, to those found on the upper upriver terrace. Brumley (1989) notes the presence of Late Middle Prehistoric materials on the upper terrace, and Late Prehistoric materials on the

lower terrace. This analysis will look at whether this observation holds true through the subsequent work that has been conducted on the site.

The last analysis contrasted those materials found adjacent to the Kootenai River to those found in the rest of the site. While this site was first observed largely in the cut bank along the Kootenai River, much of the subsequent work at the site has concentrated on the areas adjacent to the Yaak River.

The Data

Site 24LN1013 was originally identified in 1975 by the presence of fire-cracked rock eroding from the Kootenai riverbanks (Fredlund, 1975). The site included two hearths located along the west side of the Yaak River as well as fire-cracked rock, flakes and bone eroding out of both banks of the Yaak River. Over the course of the subsequent years, archaeologists have expanded the extent of the site to include most of the area covered by the campground, although in some places, much is still unknown due to a lack of excavated sediments.

Determining the boundaries of the site (Collins, 1987)

Most of the excavated sediments came from a study (87-KO-4-18) conducted in 1985 to correlate the locations of several previously recorded sites in the area in relation to one another, to determine significance, and to evaluate disturbance. During the preliminary phase, archaeologists excavated one-by-one meter test units on a 25-by-200 meter grid across the site on the up-river portion along the Kootenai River. The second

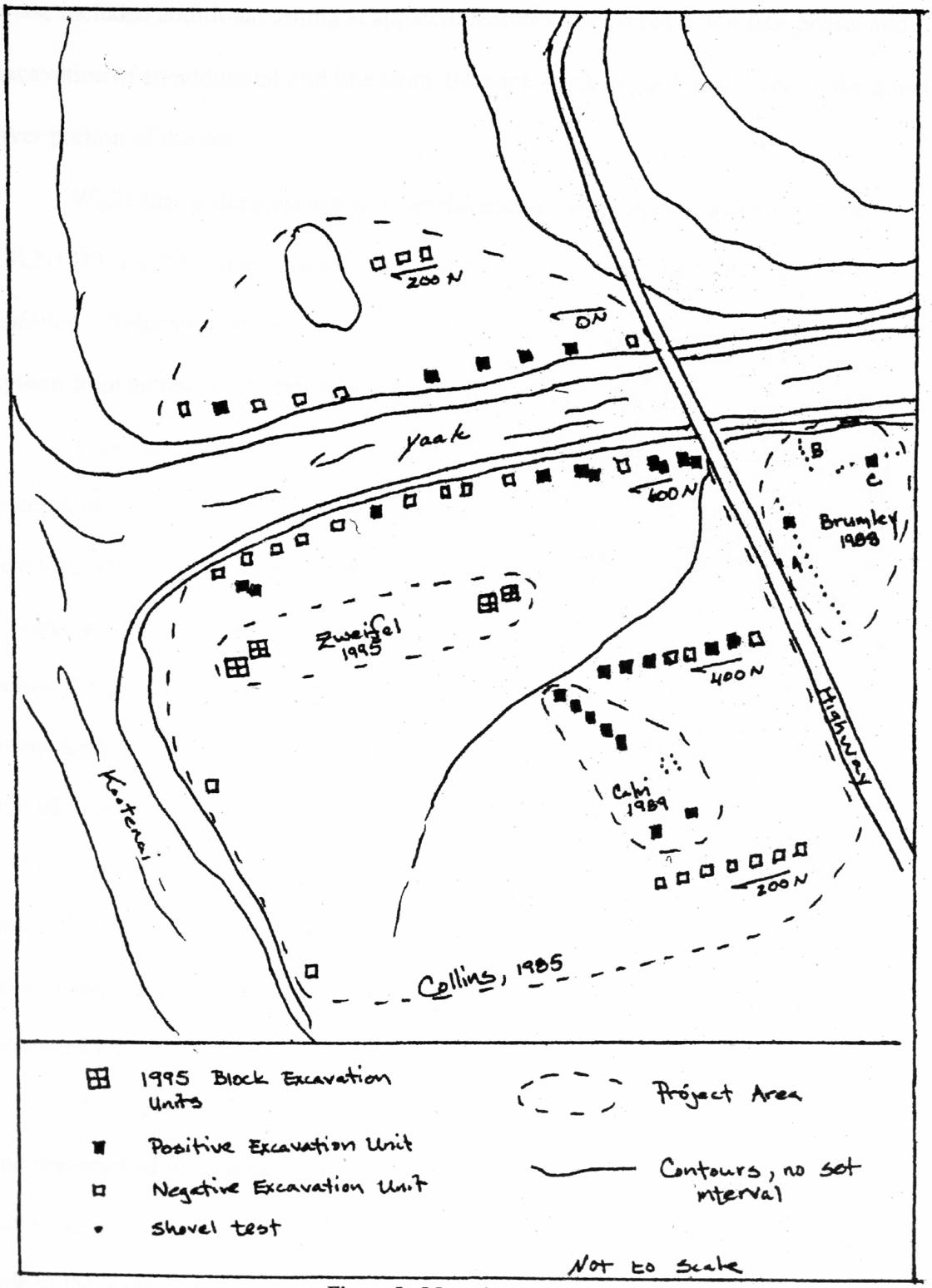

Figure 5: Map of excavations

phase included additional testing at apparent features discovered in the first phase, and excavation of an additional grid line along the bank north of the Yaak River on the down-river portion of the site.

While this is the most extensive of the excavation projects conducted in site 24LN1013, the 200-meter spacing, along with two unfinished lines left broad areas untested. Relocation of these units is problematic as they were laid out in a progressive system from an unknown starting point.

These units were generally excavated to 30 cm below the surface with two exceptions. One excavation unit that revealed a feature was dug to the bottom of the feature at 40 cm below surface. Other excavation units dug to deeper levels include two (located at 650, 651N, 425, 426W) dug to 70 cm and one (641N/426W) dug to 160 cm below surface although the cultural material in all three units only extended to 30 cm below surface. A charcoal sample collected at 120 cm yielded a date of 3,900 years +/- 360 BP (Collins, 1984). Although this sample is not associated with cultural materials Collins contrasted the apparent rapid deposition at this location to up-river sediments along the Kootenai where 8,000 years of deposition are represented in only 100 cm. The level where the sample was taken was identified as an old surface with organic accumulation. It lay about 35 cm below another possible surface.

This project yielded the largest variety of artifacts including the ubiquitous flakes and fire-cracked rock, along with projectile points, battered cobbles, worked flakes, and bone. Overall, Collins' results showed the presence of cultural material along the north side of the Yaak river with more localized pockets of cultural material to the southwest of

the Yaak. The only diagnostic projectile point from this project appears to be associated with Thoms' Late Prehistoric Period (1250-200 BP).

Yaak River Bridge Project (Brumley, 1989)

This project (88-KO-4-16) was conducted along the northeast side of the highway away from the main campground area on an upper terrace. Twenty-six shovel tests along three lines and two one-by-one meter excavation units yielded a mix of artifacts consistent with aboriginal campsites (Brumley, 1989). The results from two of the three lines of shovel tests indicate a high degree of disturbance implying a lack of stratigraphic integrity in those areas. The last line closest to the highway seemed to indicate more intact deposits.

Brumley recovered two artifacts that he considered to be temporally diagnostic. The first is a projectile point similar to those Thoms assigned to the Late Middle Prehistoric period dating to 4500-1250 BP. The second is a hafted spokeshave which he believes is a rare artifact type associated with McKean and Pelican Lake complexes of 4200 to 2000 BP. Brumley noted the earlier diagnostic artifacts found during his work in contrast to the more recent diagnostics recovered by Collins in the western portion of the site on the lower terrace.

Group Area Excavations (Calvi, 1989)

This project (89-KO-4-6) was conducted along 50 meters of a proposed water line, and around two other proposed improvements including outhouse and table

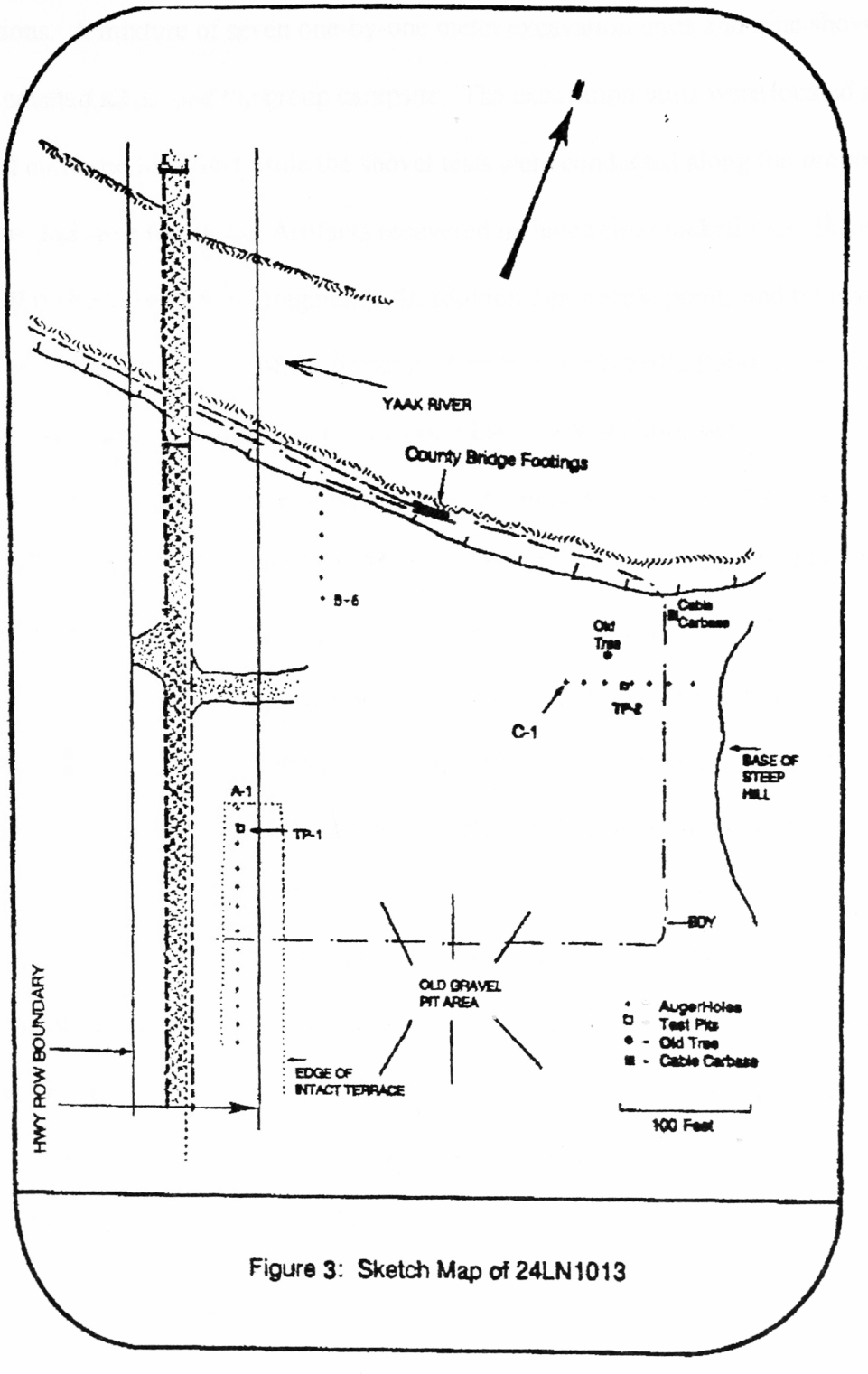

Figure 3: Sketch Map of 24LN1013

Figure 6: From Brumley, 1989

installations. A mixture of seven one-by-one meter excavation units and nine shovel tests were conducted all around the group campsite. The excavation units were located at the proposed outhouse locations while the shovel tests were conducted along the proposed water line and table locations. Artifacts recovered included fire-cracked rock, flakes, worked flakes and some bone fragments. In addition 3 projectile points and 6 broken bifaces were excavated. One of the points is identified as a Kavalla Point its use dating from the Late Middle Period, 2950 to 1750 BP (Thoms, 1984: 160, 165).

Along the waterline, five shovel tests were spaced at 10 meters. One test unit (WL-60) yielded the majority of the artifacts and the SE ¼ of it extended to 70 cm below surface. This unit was in a sand pocket and additional shovel tests (WL-57, -58, -59 and –61) were conducted at 5 meter intervals to confirm the extent of the material. All yielded additional material. The test unit at WL-80 was discontinued at 10 cm due to the high concentration of rocks that began at the surface, and all other test units were discontinued at 30 cm below surface.

Two one-by-one meter excavation units were conducted at the outhouse locations. These yielded fire-cracked rock down to 15 cm and flakes down to 10 cm below the surface. No other artifacts were found and excavation was discontinued at 30 cm below surface. Five of six shovel tests conducted where the tables were to be placed were positive yielding fire-cracked rock down to a depth of about 30 cm.

Outhouse Replacements fieldwork

The most recent work in the campground was conducted in 1995 in response to a proposed project to replace several outhouses and a new waterline. The new outhouses are larger and a research design was established to test excavate in the additional area that would be disturbed. The expected area of disturbance for each of the four outhouses was an area of twenty-five square meters, and each area was given a block designation, A, B, C or D. Five one-by-one meter excavation units were excavated at block A, and four units were excavated at each of blocks B, C and D (see Appendix B, showing a summary of block results). Sediments were removed in 10 cm arbitrary levels and excavation continued until encountering sterile sediments.

Blocks A and B are located on the point about 50 meters from the Yaak and Kootenai Rivers and near units 651N/425&426W of the 1987 excavation. These nine excavation units, like the nearby earlier (1987) units, yielded a variety of artifacts other than lithic debitage and fire-cracked rock. While the 1987 units were sterile below 30 cm, these more recent excavations yielded artifacts from deeper levels (see Appendix B, Profiles). However, the discrepancy in maximum depth of cultural material in adjacent units ranges from a 10 cm difference, to 1 meter in B units 2S/0E and 2S/1E. This probably reflects the sparseness of the deeper deposits that may reflect earlier occupations.

The material types recovered from these units were predominantly local mudstones and quartzites, along with Kootenai argillite. Artifacts included

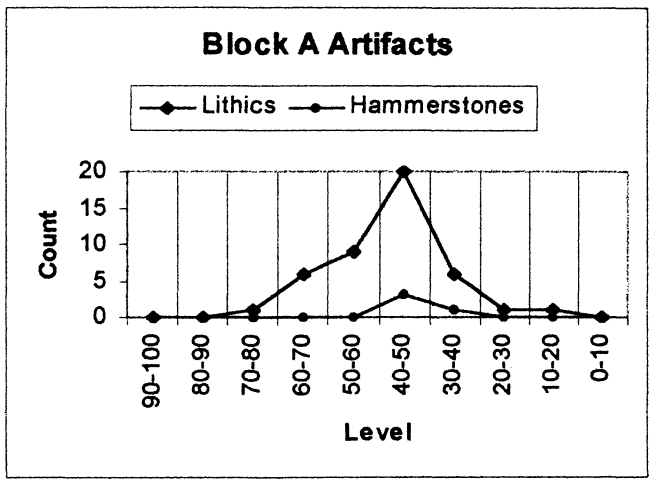

Figure 7: Summary of artifacts recovered from Block A by level

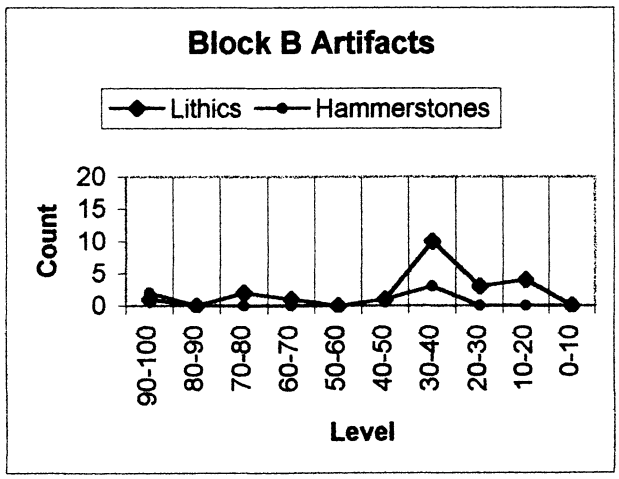

Figure 8: Summary of artifacts recovered from Block B by level

hammerstones and deer-sized faunal remains, along with lithic debitage and tools. Two of the tools were diagnostic including Late Middle and Late Period points. The Late Period point was recovered from between 30 to 40 cm below surface in one of the B

Blocks, while the Late Middle Period point was recovered from 60 cm below surface in one of the A Blocks. The material recovered from these blocks seems to indicate early sparse occupation reflected in the sediments below 60 cm, followed by a higher density occupation reflected in the sediments between 30 and 60 cm. While the peak density of artifacts occurs one level lower in the Block A units, this may be due to the slight erosional dip in the landform on which Block A lies in relation to Block B. The peak occupation level is followed by another time of sparse occupation.

Blocks C and D are over 100 meters from the lower terrace edge. These blocks were nearly sterile, with only a few pieces of fire-cracked rock in both blocks and three lithic artifacts in Block D.

1995 Research Questions

The research questions for the site focused on six key areas including 1) reconstructing the chronology of the site, 2) describing the subsistence and settlement use of the site, 3) identifying the technologies present, 4) determining the presence of evidence for trade and exchange, 5) reconstructing the paleoenvironment data, and 6) reconstructing the geomorphological and sedimentological history of the site. Generally, the 1995 excavation yielded such small samples outside lithic material that many of these questions are difficult to address. Identifiable floral and faunal remains were not recovered in amounts sufficient to provide information on species present. Clearly defined strata and temporal associations are lacking, affecting the ability to address questions about changes through time. Even among the lithic artifacts, most are

temporally and culturally undiagnostic debitage and fire-cracked rocks. The remainder of this paper will address the research questions focusing on those that deal with lithic data.

Synthesis

The lack of dateable floral and faunal remains and culturally and chronologically diagnostic lithic artifacts makes it difficult to address changes in subsistence or the paleoenvironments. A statistical analysis showed little consistent variation over the site. In other words, while individual units showed some distinction, too many excavation units yielded too little for patterns to be identifiable.

Chronology

The earliest occupation of this site is indicated by the Late Middle Period (4,500-1,500/1,000) diagnostic points that were found in 1988 (Brumley, 1989) and in 1995. There is currently no evidence for earlier occupations. Because of the active nature of the landform on which the site lies, erosion caused by either river may have destroyed or deeply buried evidence of earlier occupations. The rapid deposition indicated by the single radiocarbon date indicating 120 cm of sediment accumulation in 3,900 years, indicates a potential for older deposits to be deeply buried. As all cultural material in this unit was found in only the top 30 cm, the rate of deposition comes into question as a way to determine the duration of occupation represented by those artifacts. While most of the units were only excavated to 30 cm, in those that were excavated to deeper levels,

cultural materials were commonly recovered through at least 70 cm below surface, with some cultural materials recovered from 150 cm below surface.

The question of how the activities of the prehistoric residents changed through time at this site is problematic due to the lack of good chronometric dates or independent relative dates. Much of the interpretation of the data relies on ideas proposed by Thoms and Choquette, and the data support them both to some extent. Cherts and local materials seem to dominate the material types recovered from along the Yaak River. Diagnostic projectile points from these contexts all indicate a Late Period prehistoric occupation. On the upper terrace against the hill-slope, material types recovered were also dominated by local materials but with some cherts, obsidian and Kootenay argillite. Diagnostic projectile points from these contexts reflect a Late Middle occupation. In contrast to these, the 1995 Block excavations on the point yielded only one piece of chert (brown) and a variety of local materials and Kootenay argillite. Although these were recovered near one of the earlier units yielding Late Prehistoric points, the cultural material from these units were recovered from deeper deposits and could reflect an earlier context.

While only 48 flaked tools were recovered in situ, over half were of local materials including mudstones, argillites, and quartzites. Cherts were the most common non-local material, with the black and grays types associated with Top-of-the-World chert the most common. Of the five points identified as Late Period points, two were of the black and gray cherts. Several Kootenay argillite tools were recovered, including two points identified as Late and Late Middle periods. Only obsidian debitage was found.

Even though few tools were found, there seemed to be some pattern of material types throughout the site. Chert tools including two diagnostic Late Period projectile points were found along the Yaak River. Red and yellow cherts were found on the upper terrace and included two Late Middle period artifacts. While Kootenay argillite was present on the upper terrace, the large quantity recovered from the 1995 excavations and particularly the Block A units on the lower terrace makes it possible that this location was a more distinct activity area. Two diagnostic points were made of Kootenay argillite including one from the Late Middle and one from the Late Period. What is surprising is that the tools recovered from the Blocks A and B so little resemble the tools recovered from the nearest unit at 651N.

	Local mudstones, quartzites, argillites	Kootenay argillite	Chert black, gray, white	Chert, red, brown and yellow	Total
Lower Terrace, Yaak					
0N 50W	1		2		3
600N line	9 *(2L)*		4 *(L)*	2	15
650,651N			3 *(L)*		3
Lower Terrace, Point					
Block A/B	2	6 *(L, LM)*			8
Upper Terrace					
TP1	6		1	2 *(2LM)*	9
Group Area	7 *(2LM)*	1	1	1	10
Total	25	7	11	5	48

L = Late period artifact, LM = Late Middle artifact

Figure 9: Summary of tools by material types

Since, with the exception of the units conducted at the proposed outhouse locations, most of excavation units were dug only to a depth of 30 cm below surface, most of the material, including tools, were recovered from the upper 30 cm. However, the Late Middle Period point recovered from Block A was located at 60 cm below surface. The other Late Middle Period artifacts were recovered on the upper terrace in the upper 30 cm and since no Late Middle Period artifacts were recovered in the units on the banks of the Yaak River, the upper terrace may reflect a different, slower depositional environment than the lower terrace.

Integrity of site deposits

Historic and modern impacts to the site deposits are clearly noted within many of the excavation units as well as the obvious modern campground and highway features. Brumley notes evidence of disturbance in many of his shovel and unit tests, as does Zweifel (1995). However, there are also areas that appear to be more intact. These areas include Brumley's shovel test line A, and units scattered throughout the area. Also, many of the impacts are described in the upper portions (top 20 to 30 cm) of the units, and are not noted in as continuing in those units that extended below 30 cm. The question of older, deeper, more intact deposits remains for future research.

Calvi's (1989) waterline shovel tests, clearly show a transition from rockier soils to a small pocket of sandier soils in a ten- to fifteen-meter sequence. The radiocarbon date of 3,900 +/- 300, taken from charcoal buried 120 cm below surface (Collins, 1989) indicates relatively rapid deposition on the point between the rivers on the upriver side.

Clear evidence of pedoturbation is difficult to quantify since most of the units were discontinued at 30 cm below surface, but it appears that natural disturbances such as rodent burrowing and tree roots are also present. Indications of frost heave within the site include the tool found upright in unit A 1S/2E and broken artifacts found in two levels in A 2S/2E. Alternatively, these may be a result of tree roots (Burtchardt, 1987). However, in the most deeply excavated units (Block A and B) the cultural materials recovered included both larger lithic debitage and fire-cracked rock which should have size-sorted upwards from the smaller items if the site were only affected by cryoturbation. The maximum depth of cultural materials in adjacent units in the Blocks A and B of the 1995 excavations argues against clear stratigraphy.

Conclusion

In conclusion, because of the different excavation methods and lack of good independent chronometric controls, some of the questions posed about this site are very difficult to address. In addition, the termination of many of the excavation units at 30 cm below surface before sterile sediments were encountered makes some conclusions about what was found in those areas tentative. The low numbers of diagnostic artifacts made statistical comparison difficult. However, there does appear to be some variation of use of the site as suggested by the analysis of the diagnostic artifacts and material types that have been found to date.

It appears that older, Late Middle Period, cultural materials are located on the upper terrace where slower deposition has occurred. Artifacts are generally common in

the top 30 cm with some areas yielding almost nothing. In the 1995 units that extended below 30 cm, there is a clear peak of material that could indicate an occupation level between 30 to 50 cm below surface which dates to the Late Period based on one diagnostic projectile point. Below this level, the amount of material drops to a much lower level, and at 60 cm, yielded one of the diagnostic points reflecting a Late Middle Period occupation. At these units the material types are mostly Kootenai argillite and local mudstones and quartzites, and low presence of cherts or other materials. The more recent units along the Yaak River yielded Late diagnostic tools, with chert a common material type.

While the relatively low density of artifacts and the different work methods of the various projects made some analysis of this site difficult, the site does seem to represent occupations of up to 4,500 years. Without more definite information about the subsistence practices of the inhabitants of the site, it is difficult to place this site clearly in either of the models proposed by Thoms or Choquette. In addition, because stratigraphy in this area does not clearly delineate occupation sequences, other analysis techniques should be emphasized. Future excavations should emphasize techniques to recover any faunal or floral remains that may help to answer questions of subsistence or seasonality in addition to lithic studies.

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APPENDIX A: Summary of 1995 Block Excavations

Block A: Women's outhouse, west

	0E	1E	2E
0S			70/50
1S		110/80	90/70
2S	90/80		80/70

Block yielded a variety of fire-cracked rock, tools, lithic debitage, bone and tools including points, preforms, bifaces and hammerstones.

Unit 2S/0E shows signs of disturbance into L3 including lumber, nails etc. Signs of disturbance lessen away from the previous outhouse location (west of block). Also square postholes with fill around visible to L4 in Units 2S/0E and 1S/1E.

Located in small erosional depression that can be followed across the landform, turns into a deeper gully on opposite side of campground road.

Note: bold lines indicate profiles, see next pages.

Block B: Men's outhouse, west

	0E	1E	2E
0S			110/80
1S			120/120
2S	70/50	180/150	

Block yielded a variety of fire-cracked rock, bone, lithic debitage, bifaces and hammerstones. Fire-cracked rock recovered from 150 cm in 2S/1E.

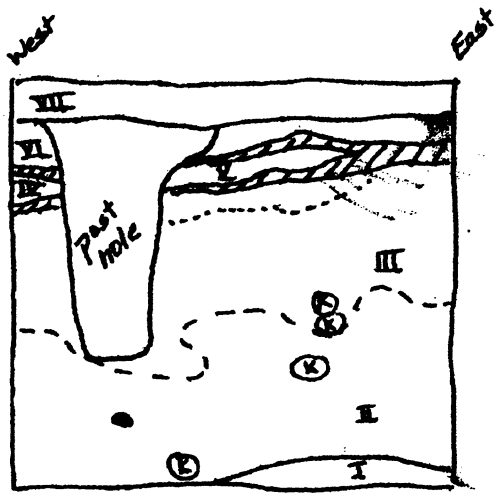
Unexcavated units 0S/0E, 0S/1E, 1S/0E and 1S/1E disturbed from old outhouse (visible depression). 2S/2E has a tree in it.

Units 2E/0S and 2E/1S opened together. Window screen and disturbed sediments found in 2S/1E along with fill of crushed gravel, rotten wood. These were removed. Unit 1S/2E shows signs of disturbance from adjacent outhouse.

Note: bold line indicates profile, see next pages.

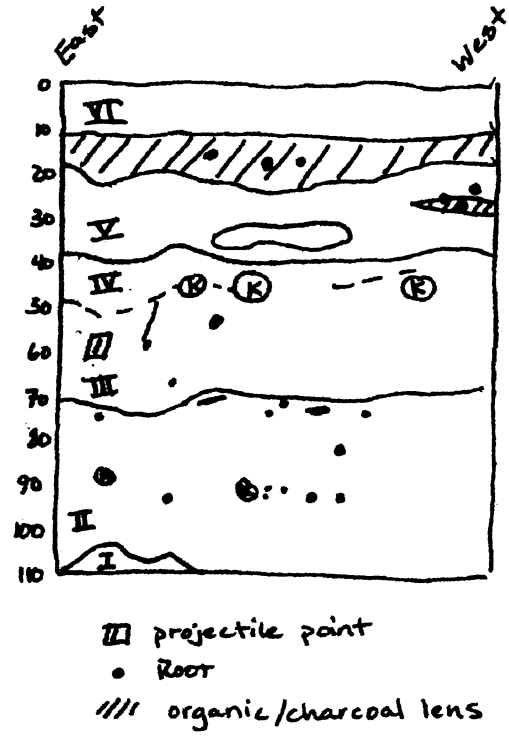
N1 = maximum unit depth
N2 = maximum depth of cultural material

Figure 5: Summary of Blocks A and B



Profile A : 2S/0E North Wall

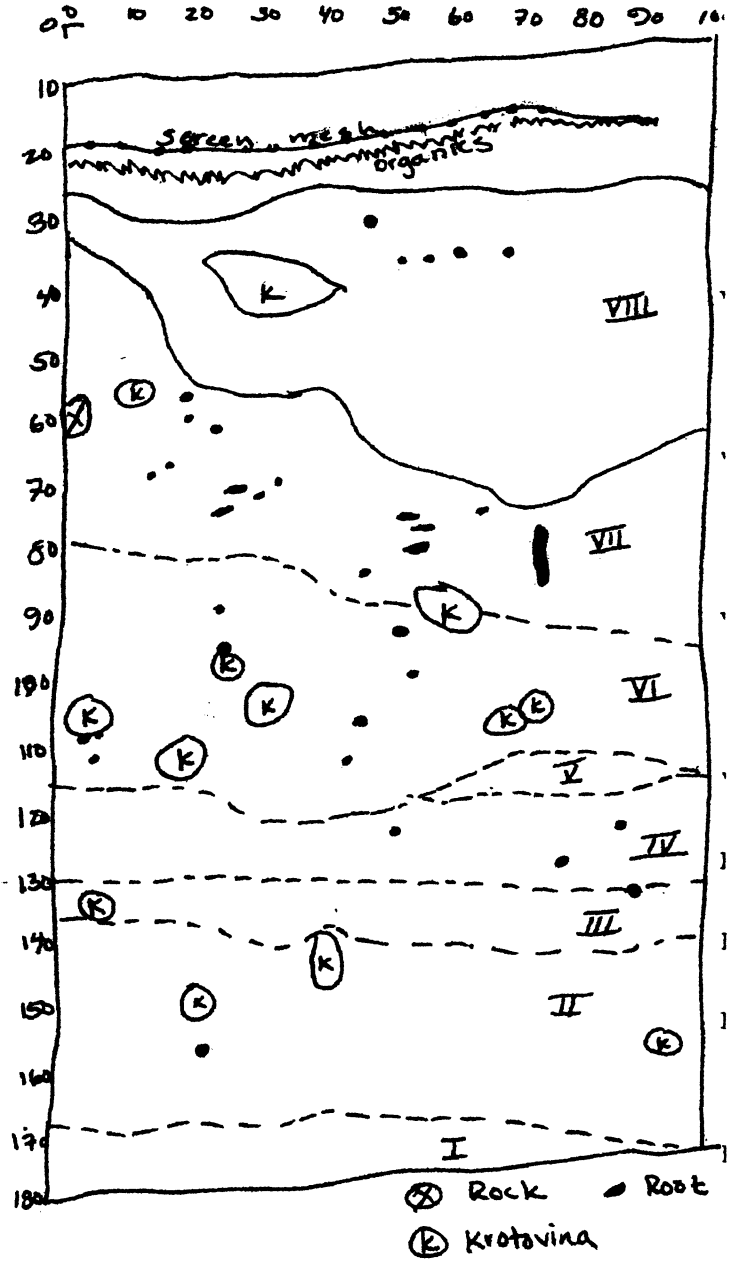
I	10yr ¾ damp, very fine sand, friable, lower boundary unknown
II	10yr 4/3 very mottled, fine, very fine lower boundary smooth abrupt
III	Lower boundary clear, wavy. 7.5yr 4/4 at top and bottom of unit but very mottled with unit II colors in between, very fine sand (silt/sand?), firm
IV	2.4y 3/2 damp, sandy silt, lower boundary defined by charcoal lens, disturbed from lower levels
V	2.5y 3/2 but visibly lighter than IV, fine sand, lower boundary in part defined by black charcoal lens, disturbed from lower levels
VI	Same as V
VII	Sand and crushed gravel fill



Profile B : 1S/1E South Wall

I	2.5y 4/3 friable, very fine damp sand, olive brown
II	2.5y 3/3 very fine sandy loam friable, damp darker brown slightly mottled
III	10yr 4/6 friable, distinct color change from II subtly blending into IV. Fine sandy loam, dark yellowish brown, more mottling with root disturbances and Possessor of Point
IV	7.5yr 4/4 damp sandy loam, reddish hint in a more mottled brown.
V	10yr 5/4 soft compaction, more mottling with increased charcoal deposits, root disturbances, distinct upper boundary (IV intrusion).
VI	Sand and crushed gravel/organic milieu

Figure 6: Block A Unit Profiles



Block B

Profile: 2S/1E East Wall

--Disturbed, gray sand from 1+ meters down, outhouse construction.

-- Intermittent oxidized red layer, result of burning above.

VIII 10yr 4/4, but redder than Munsell, sand, friable, lower boundary abrupt, irregular

VII 10yr 4/3 but darker than unit VI (no Munsell difference). Friable, lower boundary gradual, wavy. Fine sand.

VI 10yr 4/3 damp, silty fine sand, lower boundary clear, wavy, friable/very friable, moist.

V Same as I, III

IV Same as II

III Same as I, lower boundary, smooth, clear.

II 2.5y 4/3 damp, well sorted fine sand, lower boundary clear, smooth, very friable

I Well-sorted sand, 10yr 4/3 damp (poor match), salt & pepper, moist consistence, loose/very friable, lower boundary unknown

Figure 7: Block B Unit Profiles

Block C: western outhouse of the east pair

	0E	1E	2E
0S	50 10	50 ncm	70 10
1S			
2S	50 ncm		

Block yielded three pieces of fire-cracked rock and bone.

Damp, sticky matrix.

Block D: eastern outhouse of the east pair

	0E	1E	2E
0S	70 50		
1S		50 20	
2S	50 ncm		50 30

Block yielded fire-cracked rock, bone and 1 each flake, core and biface.

N1 = maximum unit depth
N2 = maximum depth of cultural material

Ncm = No cultural material, sterile unit

Figure 8: Summary of Blocks C and D

APPENDIX B: Summary of Tools

Cat #	XU	Level	Description	comments	L	w	t	material type	Mat color
92-42	0	0	scraper	early reduction flake	62	42	8.5	mudstone	black
92-45	0 picnic	0	biface	knife with base askew	30	12	9	argillite	black w/stripe
92-09	0 picnic	0	preform	lanceolate-shaped	74	33	9	quartzite	black
92-19	0N 50W	10-20	point, fragment	base	6	9	0.3	chert	white
92-20	0N 50W	10-20	point, fragment	base	6.5	14	0.2	chert	grey
92-18	0N 50W	10-20	point, fragment	base	8	12	6.5	quartzite	white
92-13	599N 125W	0-10	point, side-notched	**Late** small side-notched, crude	21	11	4	chert	lgray
92-06	599N 125W	20-30	knife	water worn tabular knife from discoidal cobble	54	40	7	quartzite	black
92-17	600N 099W	10-20	biface, fragment		12	8	2	mudstone	black
92-14	600N 100W	0-10	point, fragment	base, side or corner notched	8	10	2	chert	grey
92-15	600N 100W	0-10	point, side-notched	very crude on poor material	30	17	7	quartz	white
92-25	600N 100W	10-20	biface, fragment	possibly fire-damaged, possible point, midportion	24	24	5	chalcedony	red mottled
92-16	600N 100W	10-20	preform	preform or knife, manufacture break	45	39	11	quartzite	tan
92-02	600N 100W	10-20	point, corner-notched	**Late** small corner-notched point, with tip and 1 barb missing	15	11	3	quartzite	black
92-28	600N 100W	10-20	scraper		7	16	2.5	chert	gray
92-139	600N 125W	18	point, fragment	tip				chert	red/brwn
92-07	600N 175W	0-10	biface	tabular biface knife	35	37	5	argillite	green w/striations
92-10	600N 176W	10-40	point, corner-notched	**Late** small corner- to side- notched, made from bifacial thinning flake with little alteration other than shaping	18	11	2	mudstone	gray

Cat #	XU	Level	Description	comments	L	w	t	material type	Mat color
92-24	600N 200W	0-10	spokeshave	tool built on bifacial thinning flake	40	29	4	mudstone	green
92-11	651N 425W	10-20	point, fragment	base	12	12	2	chert	black
92-12	651N 425W	10-20	point, fragment	biface tip on thinning flake, no real thinning flakes	19	17	3	chert	lgray w/black
92-01	651N 426W	20-30	point, side-notched	**Late** small side-notched (Avonlea)	16	8	2	chert	lgray
95-009	A 0S, 2E	30-40	uniface	cobble, chopper, triangular-shaped, broken	144	130	39	quartzite	black
95-011	A 0S, 2E	40-50	antler tine	tip fragment, off-set center rings sujggest use that wore away one side more than another (flint-knapping?)	15	4		antler	
95-012	A 1S, 1E	60	point, side-notched	**Late Middle** medium corner- to side-notched	41	21	6	Kootenay argillite	
95-013	A 1S, 2E	30-40	uniface	Resting nearly upright in 5cm e of se corner	64	42	7	Kootenay argillite	
95-014	A 2S, 0E	10-20	preform		27	21	5	Kootenay argillite	
95-016	A 2S, 2E	30-40	biface	2nd half found in level 6	52	54	2	Kootenay argillite	
95-020	A 2S, 2E	50-60	biface	2nd half found in level 4 above	62	62	12	Kootenay argillite	
92-22	A09	0	spokeshave	core fragment with 50% cortex, 2 edges worked	45	31	15	argillite	gray
95-003	B 2S, 0E	30-40	biface, fragment		9	11	1	quartzite	green
95-005	B 2S, 1E	30-40	point, side-notched	**Late** small corner- to side-notched 2 pieces with broken stem	38	14	3		grey
92-34	host	unk	biface	possibly hafted, manufacture break across stem	50	18	7.5	mudstone	black
92-27	host	unk	scraper	unifacially worked 3/4	20	13	3.5	chert	gray
92-47	TP1	10	biface	fragment, chunky	22	30	9	argillite	gray
92-48	TP1	10	biface	fragment	14	28	6	argillite	gray
92-21	TP1	20	spokeshave	**Late Middle** (Brumley), knife broken during manufacture, with unifacially worked edges	28	31	5	chalcedony	brown w/inclusions

Cat #	XU	Level	Description	comments	L	w	t	material type	Mat color
92-49	TP1	25	biface	fragment	29	24	5	argillite	gray
92-50	TP1	30	biface	lots of step fractures poor flaking material	49	37	7	argillite	lgray
92-03	TP1	30	point, side-notched	**Late Middle** medium side-notched point (Pelican Lake)	30	12	9	chalcedony	yellow
92-23	TP1	25	scraper	end scraper, with edge wear, rounded edges	31	21	7	chalcedony	gray
92-35	WL50	0-10	biface	large and chunky with some cobble cortex, wide	46	32	18	mudstone	black
92-44	WL56	0-20	biface	one side shows more edge polish (mic) then opposite	42	19	6	chert	tan
92-37	WL60	0-10	biface	biface frag, manufacture break	25	35	10	quartzite	black
92-39	WL60	10-20	utilized flake	elongated flake with retouch on lateral edges	40	19	5	chert	black w/yellow
92-36	WL60	20-30	biface	lower portion, manufacture break	38	35	9.5	quartzite	black
92-41	WL60	20-30	point, side-notched	**Late Middle** medium side-notched dart point	40	21	7	mudstone	black
92-40	WL60	20-30	point, side-notched	**Late Middle** medium sized with convex base with missing tip- use break (Kavalla)	29	18	4	quartzite	brown
92-43	WL90	10-20	biface	manufacture break	33	27	10	Kootenay argillite	green w/inclusions
92-26		unk	utilized flake	bifacially modified 'ugly' flake, bifacially worked about 1/4, unifacially worked on two sides	58	34	9	quarzite	black
95-015			biface		40	23	4	mudstone	d. grey